

In the claims:

Presented below are the claims, as amended, with changes entered and not marked.

1 1. (Amended) A method comprising:  
2 using a data access primitive to model addressability for a memory-mapped device,  
3 addressability comprising an address matching function, a lane matching  
4 function and one or more bus connections,  
5 specifying a first starting address for the memory-mapped device; and  
6 converting the data access primitive to logic components that implement a first set  
7 of addressing matching function, lane matching function and one or more bus  
8 connections for the memory-mapped device based upon the data access  
9 primitive and the first starting address.

1 2. (Amended) The method of claim 1, further comprising converting the data  
2 access primitive to logic components that implement a second set of addressing  
3 matching function, lane matching function and one or more bus connections for the  
4 memory-mapped device based upon the data access primitive and a second starting  
5 address.

1 3. (Unchanged) The method of claim 1, further comprising:  
2 coupling the data access primitive to the memory-mapped device; and  
3 coupling an address bus to the data access primitive.

1 4. (Unchanged) The method of claim 3, wherein the addressing matching function  
2 compares an address from the address bus with the first starting address for the  
3 memory-mapped device.

1 5. (Unchanged) The method of claim 4, wherein the first starting address is  
2 specified by a user.

1 6. (Unchanged) The method of claim 4, wherein the first starting address is  
2 generated automatically.

1 7. (Unchanged) The method of claim 6, wherein the first starting address is  
2 generated automatically using a set of address constraints.

1 8. (Unchanged) The method of claim 1, wherein the data access primitive is  
2 selected to allow addressability for a minimum size transaction supported by the  
3 memory-mapped device.

1 9. (Unchanged) The method of claim 8, wherein the memory-mapped device is a  
2 register.

---

1 10. (Amended) A computer readable medium containing executable instructions  
2 which, when executed in a processing system, causes the processing system to  
3 perform a method comprising:  
4 using a data access primitive to model addressability for a memory-mapped device,  
5 addressability comprising an address matching function, a lane matching

6 function and one or more bus connections,  
7 specifying a first starting address for the memory-mapped device; and  
8 converting the data access primitive to logic components that implement a first set  
9 of addressing matching function, lane matching function and one or more bus  
10 connections for the memory-mapped device based upon the data access  
11 primitive and the first starting address.

1 11. (Amended) The computer readable medium of claim 10, further comprising  
2 converting the data access primitive to logic components that implement a second  
3 set of addressing matching function, lane matching function and one or more bus  
4 connections for the memory-mapped device based upon the data access primitive  
5 and a second starting address.

1 12. (Unchanged) The computer readable medium of claim 10, further comprising:  
2 coupling the data access primitive to the memory-mapped device; and  
3 coupling an address bus to the data access primitive.

1 13. (Unchanged) The computer readable medium of claim 12, wherein the  
2 addressing matching function compares an address from the address bus with the  
3 first starting address for the memory-mapped device.

1 14. (Unchanged) The computer readable medium of claim 13, wherein the first  
2 starting address is specified by a user.

1 15. (Unchanged) The computer readable medium of claim 13, wherein the first  
2 starting address is generated automatically.

1 16. (Unchanged) The computer readable medium of claim 15, wherein the first  
2 starting address is generated automatically using a set of address constraints.

1 17. (Unchanged) The computer readable medium of claim 10, wherein the memory-  
2 mapped device is selected to allow addressability for a minimum size transaction  
3 supported by the memory-mapped device.

1 18. (Amended) A method, comprising:  
2 selecting a data access primitive to provide data access of a desired transaction  
3 size, and to indicate an addressing matching function, a lane matching  
4 function and one or more bus connections for a memory-mapped device;  
5 specifying an address constraint for the memory-mapped device;  
6 instantiating a logic for the memory-mapped device, comprising:  
7 generating a starting address for the memory mapped device using the  
8 address constraint;  
9 using the selected data access primitive and the starting address to map the  
10 logic for the memory mapped device capable of being accessed at the  
11 desired transaction size, comprising:  
12 generating first logic components that implement the address matching  
13 function, and

A3/B4  
15  
generating second logic components that implement the lane matching  
function and the one or more bus connections.

---

1 19. (Unchanged) The method of claim 18, wherein the address constraint is  
2 specified by a user, and wherein the starting address for the memory mapped  
3 device is generated automatically.

1 20. (Unchanged) The method of claim 18, wherein the transaction size is one in a  
2 group comprising a byte, a halfword and a word.

1 21. (Unchanged) The method of claim 18, further comprising using a new starting  
2 address for the memory-mapped device without having to specify changes to the  
3 addressing function, the lane matching function and the one or more bus  
4 connections.

---

A4/B4  
1 22. (Amended) ~~The method of claim 21, wherein different logic for the memory~~  
2 ~~mapped device is instantiated automatically using the same data access primitive~~  
3 ~~and the new starting address.~~

---

1 23. (Unchanged) The method of claim 18, wherein the addressing matching  
2 function compares an address from an address bus coupled with the data access  
3 primitive with the starting address, and wherein when there is match, the lane  
4 matching function matching the transaction size of a transaction to a respective  
5 section of the memory-mapped device.

---

1 24. (Amended) ~~A computer readable medium containing executable instructions~~  
2 ~~which, when executed in a processing system, causes the processing system to~~

---

3 perform a method, comprising:

4 selecting a data access primitive to provide data access of a desired transaction

5 size, and to indicate an addressing matching function, a lane matching

6 function and one or more bus connections for a memory-mapped device;

7 specifying an address constraint for the memory-mapped device;

8 instantiating a logic for the memory-mapped device, comprising:

9 generating a starting address for the memory mapped device using the

10 address constraint;

11 using the selected data access primitive and the starting address to map the

12 logic for the memory mapped device capable of being accessed at the

13 desired transaction size, comprising:

14 generating first logic components that implement the address matching

15 function, and

16 generating second logic components that implement the lane matching

17 function and the one or more bus connections.

SB4  
A5

1 25. (Unchanged) The computer readable medium of claim 24, wherein the address  
2 constraint is specified by a user, and wherein the starting address for the memory  
3 mapped device is generated automatically.

1 26. (Unchanged) The computer readable medium of claim 24, wherein the  
2 transaction size is one in a group comprising a byte, a halfword and a word.

1 27. (Unchanged) The computer readable medium of claim 24, further comprising  
2 using a new starting address for the memory-mapped device without having to  
3 specify changes to the addressing function, the lane matching function and the one  
4 or more bus connections.

---

sl  
By  
A  
1 28. (Amended) The computer readable medium of claim 27, wherein different  
2 logic for the memory mapped device is ~~instantiated~~ automatically using the same  
3 data access primitive and the new starting address.

---

1 29. (Unchanged) The computer readable medium of claim 24, wherein the  
2 addressing matching function compares an address from an address bus coupled  
3 with the data access primitive with the starting address, and wherein when there is  
4 match, the lane matching function matching the transaction size of a transaction to a  
5 respective section of the memory-mapped device.